A communications system for mobile radio telephony comprising at least one subscriber territory located in a total territory

Claims

1. A communications system for mobile radio telephony comprising mobile devices, comprising modules which can be inserted into the mobile devices, with at least one subscriber territory being fixed inside the total territory covered by the communications system, within which subscriber territory communication takes place from and/or to the mobile devices under special conditions, and comprising means by which it can be determined whether the mobile device is located inside the subscriber territory,

   characterized in that

   the means are arranged on the module or in a determination unit which can be accessed by means of remote polling.

2. A communications system in accordance with claim 1, wherein the module is the subscriber identification module (SIM).

3. A communications system in accordance with either of claims 1 or 2, wherein location areas in which one or more radio cells are located are arranged in the total territory covered by the communications system.

4. A communications system in accordance with claim 3, wherein location areas and/or the radio cells have identity data characterizing them.

5. A communications system in accordance with claim 4, wherein the identity data include identifiers and coordinates.

6. A communications system in accordance with either of claims 4 or 5, wherein means are provided in the communications system by means of which the identity data of the location areas and/or of the radio cells can be transmitted to the mobile devices.

7. A communications system in accordance with any one of the preceding claims, wherein an interface is provided in the mobile devices by means of which the identity data can be transmitted to the module.

8. A communications system in accordance with any one of the preceding claims, wherein means are provided in the module and/or in the determination unit of the communications system by means of which the identity data of the location area or radio cell in which the mobile device is located can be compared with data characterizing the subscriber territory.

9. A communications system in accordance with claim 8, wherein the data characterizing the subscriber territory include identifiers and coordinates of the locations areas and/or radio cells located in the subscriber territory.

10. A communications system in accordance with either of claims 8 or 9, wherein the data characterizing the subscriber territory are stored in the module and/or in the determination unit.

11. A communications system in accordance with any one of the preceding claims, wherein the means by which it can be determined whether the mobile device is located inside the subscriber territory are designed such that it can be determined by them whether the coordinates of a location area or of a radio cell of the communications system are disposed in a region which is fixed by a location and the radius of a circle surrounding the location as a center.

12. A communications system in accordance with claim 11, wherein the coordinates of the location and the radius are stored in the module or in the determination unit.

13. A communications system in accordance with either of claims 11 or 12, wherein the identifiers of the location areas and/or of the radio cells are designated such that they are in an unambiguous relationship with the coordinates of the location area and/or of the radio cell so that the coordinates can be determined from the identifiers.

14. A communications system in accordance with claim 13, wherein means are provided in the module or in the determination unit by which the coordinates can be determined on the basis of the identifiers.

15. A communications system in accordance with any one of the preceding claims, wherein the module and/or the determination unit has means by which it can be determined whether the identifier of a location area and/or of a radio cell coincides with a predetermined identifier of the location area and/or of the radio cell of the subscriber territory.

16. A communications system in accordance with claim 15, wherein the predetermined identifier is stored in the module or in the determination unit.

17. A communications system in accordance with claim 16, wherein the identifiers stored in the module or in the determination unit are at least partly stored in a form reducing the storage requirements.

18. A communications system in accordance with any one of the preceding claims, wherein the determination unit has a transmitter and receiver unit, with the transmitter unit serving the reception of a poll of the association with a subscriber territory and the transmitter unit serving the transmission of the result of the examination whether the mobile device is located in a subscriber territory.

19. A communications system in accordance with any one of the preceding claims, wherein an interface is provided between the mobile device and the module via which the information whether the mobile device is located in a subscriber territory can be transmitted from the module to the mobile device in the form of a control signal.

20. A method of operating a communications system for mobile radio telephony comprising mobile devices and comprising modules which can be inserted into the mobile devices, with at least one subscriber territory being fixed inside the total territory covered by the communications system inside which subscriber territory communication takes place from and/or to the mobile devices under special conditions, and with a determination taking place whether the mobile device is located in the subscriber territory,

characterized in that

the determination takes place by means of the module or by means of a determination unit which is accessed by means of remote polling.

21. A method in accordance with claim 20, wherein the method is carried out by means of the communications system in accordance with any one of the claims 1 to 19.

22. A method in accordance with either of claims 20 or 21, wherein the examination whether the coordinates of a location area and/or of a radio cell are disposed in a region which is fixed by a location and the radius of a circle surrounding the location as a center takes place by means of the module and/or of the determination unit.

23. A method in accordance with any one of the preceding claims, wherein an examination whether the identifier of a location area or of a radio cell coincides with a predetermined identifier of a location area or of a radio cell takes place by means of the module and/or of the determination unit.

24. A method in accordance with either of claims 22 or 23, wherein the examination in accordance with claim 23 takes place prior to the examination in accordance with claim 22.

25. A method in accordance with any one of the preceding claims, wherein the location and the radius of the region in accordance with claim 22 and/or the predetermined identifiers in accordance with claim 23 are stored in the module and/or in the determination unit.

26. A method in accordance with claim 25, wherein the predetermined identifiers are at least partly stored in a manner reducing the memory requirements in the module and/or in the determination unit.

27. A method in accordance with any one of the preceding claims, wherein the coordinates of the location areas and/or of the radio cells are determined with reference to their identifier and these coordinates are used as the basis for the method in accordance with claim 22.

28. A method in accordance with any one of the preceding claims, wherein the identifier of the location area and/or of the radio cell and/or their coordinates are forwarded by a transmitter and receiver station to the mobile device and from this to the module.

29. A method in accordance with claim 28, wherein the data forwarded from the mobile device to the module are transmitted from this to the determination unit; and in that the determination unit – after an examination whether the mobile device is located in a subscriber territory – forwards the result to the mobile device and the latter to the module.